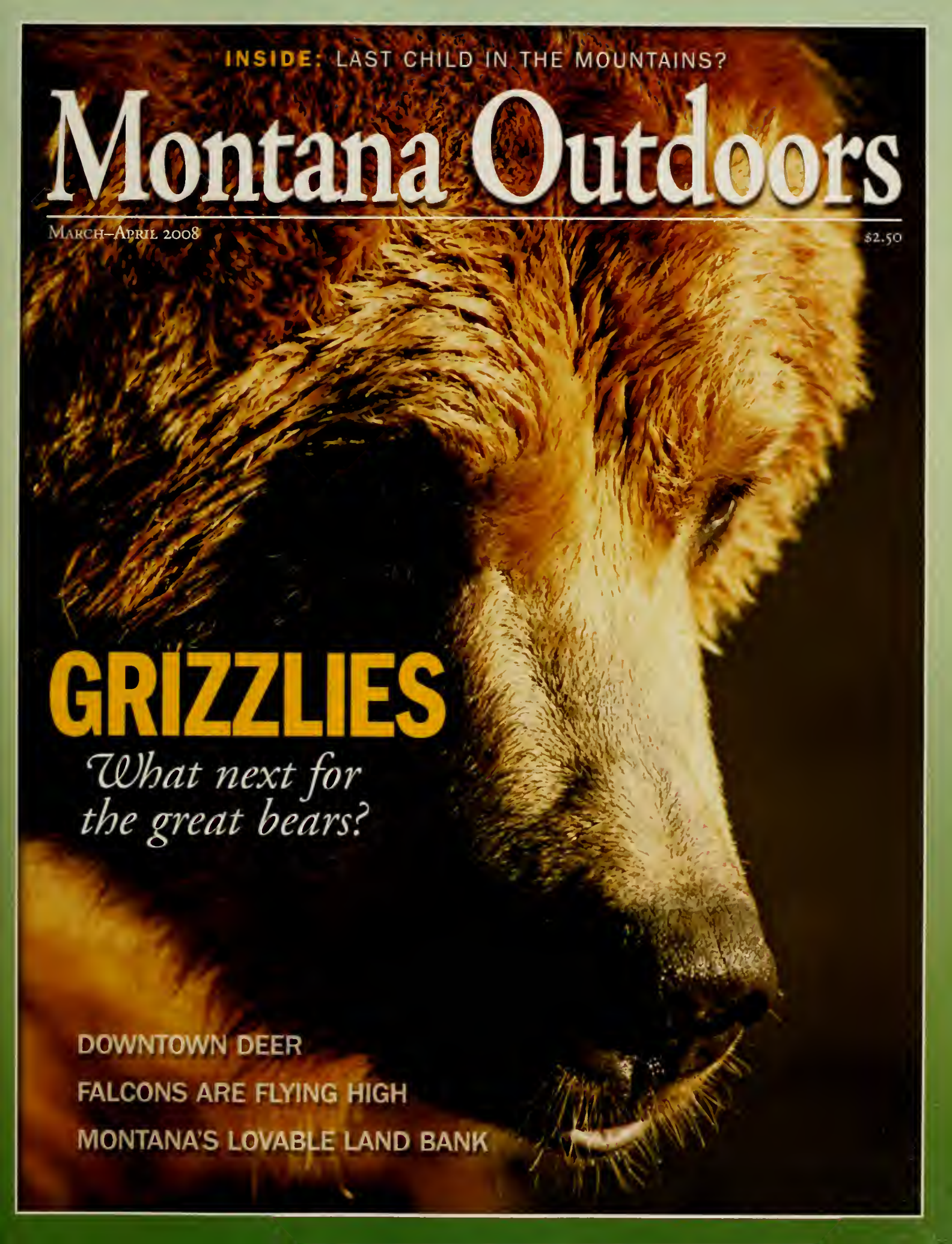

INSIDE: LAST CHILD IN THE MOUNTAINS?

Montana Outdoors

MARCH–APRIL 2008

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GRIZZLIES

What next for the great bears?

DOWNTOWN DEER

FALCONS ARE FLYING HIGH

MONTANA'S LOVABLE LAND BANK

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Montana Outdoors

MARCH–APRIL 2008

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Peregrine falcons were taken off the endangered species list nine years ago. Researchers and volunteers continue to monitor these lightning-fast raptors to make sure they stay off. *By Deborah Richie Oberbillig*

ISTOCKPHOTO.COM

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FACE TIME Most kids learn to love the outdoors from their parents. See page 22 to learn why that connection may be coming undone—and what parents can do to keep the outdoors tradition alive in their family. Photo by Tim Christie.

FRONT COVER Montana is now home to more grizzly bears than anytime since the mid-1800s. See what's in store for the great bear beginning on page 14. Photo by Tom Murphy.

The state's role

In the excellent article titled "The Amazing Saga of Montana's Elk" (November–December), Sam Curtis summarized the past and present issues and dilemmas that FWP faces in managing elk populations. One of the main elk management issues is balancing the interests of private landowners and the public regarding public access. There is no question that the principle of private land ownership is sacrosanct. But when private landowners intervene in the state's wildlife management plans by preventing hunting on their land—which is their choice—they should also have to abide by some requirements to have that right as it relates to free-ranging wildlife—which they do not own. Private landowners must somehow be forced by law to work with the state—not just put up "no hunting" signs. Possibly mandatory Block Management units—especially for large parcels adjoining federal, state, and other public lands—could be used to keep private land from becoming "wildlife sanctuaries." If the present course continues (more people, less access), we will have an overpopulation of elk and predators. Unfortunately, as humans continue to encroach on wildlife habitat, we can no longer rely on nature to manage these issues. That's what the state is for—not for private landowners to decide or impede.

Joe Graziano
Hamilton

Good lesson

The September–October issue of *Montana Outdoors* got my attention with the story on Hunter Education's 50th anniversary. I was one of the first instructors in 1957. It was a great class to teach. It was also a serious subject. For one class, I borrowed a .30-06 rifle from a local gunsmith that was split back from the muzzle in 3-foot-long strips. That's how I taught the students what can happen when mud gets into the barrel.

Daniel G. Block
Dillon

Instructive perspective

My thanks for publishing the thoughtful piece by John Madson, "Why We Hunt" (November–December), which was followed by a similar article in *National Geographic* ("Hunters: For the Love of the Land," November). As someone who hunts birds but not four-legged game, I nonetheless found Madson's perspective instructive, and to some extent uncanny in relation to my own. And I'm reminded of an observation made decades ago by Spanish philosopher Jose Ortega y Gasset in his book *Meditations on Hunting:* "One does not hunt in order to kill. On the contrary, one kills in order to have hunted." While that will strike some as inhumanely incorrect, it seems to put the emphasis where it belongs. By the way, as a periodical, *Montana Outdoors* is a wonder.

Gordon Wishard
Indianapolis, IN

Dog lovers

Thank you for the beautiful photo of a man and his dog on the back of your September–October issue. Contrast this loving, caring relationship with the disgusting conduct of a wealthy NFL quarterback in the news last summer.

Kevin Kadlec
Peoria, AZ

As always, your magazine is excellent. Exceptional writing: informative, objective, and insightful. The photo on the back cover of your September–October magazine ("Dog's Best Friend") is probably the best shot ever. I carry the magazine with me at all times to show everyone I meet.

L. Sanford Selvey II
Billings

Dreaming of paradise

I just received my second issue of your publication today, and it inspired me in such a way that I had to drop you a reminder as well as a word of thanks. The reminder: You folks in Montana need to pinch yourselves every so often to be reminded how blessed you are to be living the dream of many folks who can't live in your fine state (such as yours truly). As a native resident of North Carolina, I feel very fortunate to live at the foot of the Blue Ridge Mountains (you would probably call them the Blue Ridge *Buttes*). As fortunate as I may feel, I still wait all year to make my annual pilgrimage to the West, usually to Montana. The thanks: Your fine publication is just the ticket to give me a little Montana "pick-me-up" during those long stretches between visits. Thank you for putting together a great conservation magazine that not only informs, but also keeps alive the "outdoors spirit" of this ol' eastern boy until he can once again experience the beauty of nature in a place you call home and that I call paradise on earth: Montana.

David Brintle
Mount Airy, NC

Clarification

In the November–December issue, we incorrectly stated that the Custer National Forest, headquartered in Billings, extends east into South Dakota. There it becomes the Black Hills National Forest, headquartered in Custer, South Dakota.

■ We welcome comments, questions, and letters to the editor. We'll edit letters as needed for style and length. Reach us at *Montana Outdoors*, P.O. Box 200701, Helena, MT 59620-0701, or tdickson@mt.gov.

TOM DICKSON

A sensible way to solve the bridge access and fencing problems

During the past few years, landowners and anglers have been working on a proposal that clarifies state law regarding the rights of landowners to extend their fences to bridge abutments. As it now stands, such fencing is illegal. A public right-of-way along all public roads, usually about 30 feet extending in each direction from the center line, continues along bridges. It is unlawful for private landowners to encroach on a public right-of-way, and that includes extending a fence to a bridge. Obviously, the law needs to be adjusted. It is common practice—and common sense—for livestock owners to run their fence up to a bridge to keep cattle and other livestock from wandering out onto the road.

Unlikely as it might sound, the group pushing hardest for the clarification is Montana Trout Unlimited. In exchange for supporting the legalization of bridge abutment fencing, trout anglers and floaters want landowners to make it easier to cross the fences at the abutments to reach streams. Under Montana's 1985 Stream Access Law, streams are public on both banks up to the high-water mark. And because bridges are where the river right-of-way intersects the road right-of-way, anglers may legally access streams from bridges. Though this provision has never been codified in law by the legislature, a 2000 Montana attorney general's ruling determined that county bridge access is legal. Stream users don't think it's fair that they have to climb over barbed wire to exercise legal access.

Montana Trout Unlimited—along with Fish, Wildlife & Parks, the Montana Stockgrowers Association, Montana Farm Bureau, Montana Wildlife Federation, and Montana Association of Counties—is proposing to kill two birds with one stone. The proposal would make it legal for landowners to fence to abutments, and make it easier for people to cross fences at the abutment with a gate, stile, angler's ladder, or PVC pipe over the top barbed-wire strand. We're not talking about creating fishing access sites or putting in parking lots, just minor fence modifications. Montana Trout Unlimited and other sportsmen's groups will help fund and construct the angler accesses for any landowners who ask them, as several ranchers have already done.

During the 2007 legislative session, a similar proposal passed the Montana Senate with Governor Brian Schweitzer's support, but the House declined to pass that bill. Come 2009, we're hoping that a bill with broad legislative support will become law. It would finally put to rest the unfortunate situation where it's illegal for livestock owners to keep their cattle out of the road and anglers risk tearing their waders or breaking their necks trying to legally move from a bridge to a stream.

—M. Jeff Hagener, *Director, Montana Fish, Wildlife & Parks*

NATURAL WONDERS

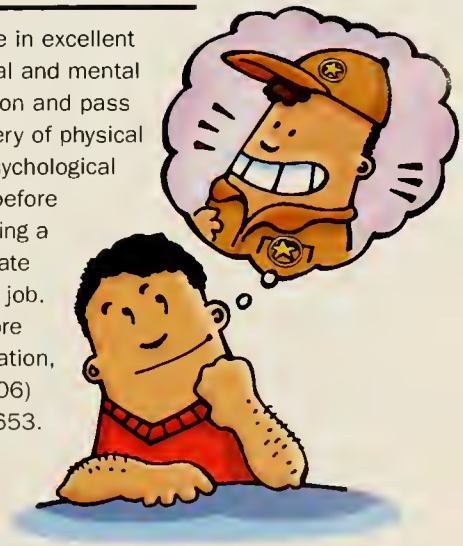
ILLUSTRATIONS BY PETER GROSSHAUSER

Q. What is the most popular fishing river in Montana?

A. Based on the number of anglers fishing there each year, it's the Madison. Other heavily fished rivers include the Missouri, Bighorn, Bitterroot, Clark Fork, Gallatin, and Yellowstone. Fishing pressure is greatest in July.

Q. A Montana game warden seems like a dream job. How do I apply?

A. A prospective game warden must be at least 20 years old and hold a bachelor's degree from an accredited university in fish and wildlife management, park management, outdoor recreation, criminal justice, or a closely related field. Applicants must also be in excellent physical and mental condition and pass a battery of physical and psychological tests before becoming a candidate for the job. For more information, call (406) 444-5653.



NOPPADOL PAOTHONG

Sage-grouse saga continues

The sage-grouse could end up on the federal list of threatened or endangered species after all. In December 2007, a federal district court rebuked the U.S. Fish and Wildlife Service (USFWS) for ignoring expert advice and the "best science" available when the agency decided three years earlier not to protect the prairie bird under the Endangered Species Act. If allowed to stand, the court's ruling would require the USFWS to reconsider its decision and reassess the status of sage-grouse.

In late December, the Center for Biological Diversity sued the Interior Department, seeking documents about decisions on other existing and potential endangered species the group says were tainted by political pressure from former Deputy Assistant Interior Secretary Julie MacDonald, who resigned in May. In November, the USFWS reversed seven rulings that denied increased protection to endangered species. The decision came after investigators found that MacDonald had edited scientific conclusions and intimidated staff.

State and industry officials in the West have said sage-grouse listing would hamper mining, energy development, and cattle grazing on federal land. Environmental groups argue that disruptions would be minor. Sage-grouse numbers in Montana are healthy, primarily due to abundant habitat. In the past year, however, FWP officials have raised concerns that natural gas drilling may be disrupting the bird's sagebrush habitat and mating rituals.

"Montana and other western states are now updating information on the status of sage-grouse and documenting our ongoing efforts to secure habitat," says Chris Smith, FWP chief of staff.

In 2005 the USFWS decided sage-grouse were doing fine. A federal judge recently ordered the agency to reconsider its decision.

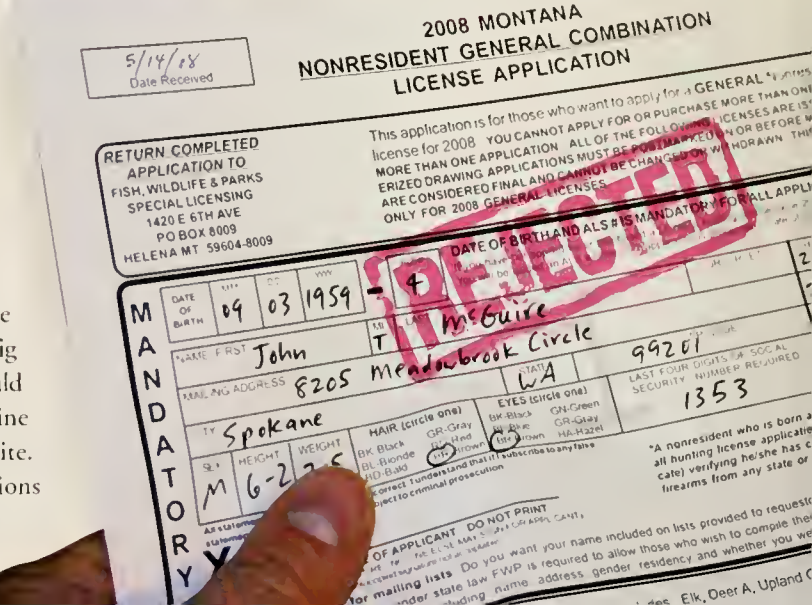
Reduce odds of license rejection

Hunters hoping to get the best chance of drawing a big game permit or license should consider applying on-line through the FWP website. Though on-line applications don't receive special preference, they reduce the chances of errors that result in application rejections. The deadlines to apply for FWP's spring drawings are approaching fast: May 1 for moose, bighorn sheep, and mountain goat; and June 2 for elk, deer, and antelope.

"Hunters forgetting to sign their paper application is the number one reason we have to reject applications," says Hank Worsech, FWP License Bureau chief. "When applying on-line, hunters don't have to worry about signing." Worsech adds that applicants who use the Internet receive instant confirmation that their application is accepted and accurate. In fact, the Internet application form will not be accepted until the applicant correctly enters all of the information. The only application error that cannot be detected over the Internet is if a hunter accidentally selects a valid hunting district, but not the one he or she intends. "Always double- or triple-check the hunting district you select before ending the on-line transaction," says Worsech. "Once submitted, an application can't be changed."

For those who do not own a computer, Internet access is available at Montana's 110 public and branch public libraries.

Look for special drawing applications on the FWP web page at fwp.mt.gov under "Online Services." Applicants will need a MasterCard or Visa card. A convenience fee of $1.25, plus two percent of the total purchase, will be added. On-line applicants can print a receipt for their records.



TONY BYNUM

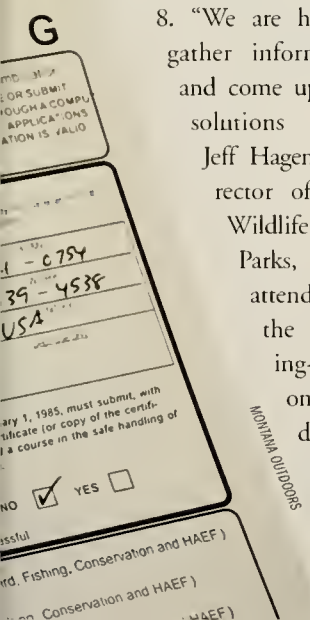
PAUL CHENEAU

Too many elk? Or too few public access opportunities?

Across much of Montana, elk numbers are growing while public hunting access to private property is shrinking.

Everyone agrees Montana faces an elk problem. But people disagree over the exact nature of the problem. Some landowners say the state has too many elk. Other Montanans, mostly hunters, say the problem is a lack of public access to elk on private land.

More than 300 people gathered to hear hunters, outfitters, landowners, ranch managers, biologists, and others voice these and other perspectives at the day-long Elk Summit 2007, held at Montana State University on December 8. "We are here to gather information and come up with solutions later," Jeff Hagener, director of Fish, Wildlife & Parks, told attendees in the standing-room-only auditorium.



MONTANA OUTDOORS

According to Ken Hamlin, FWP research biologist, 64 percent of the state's 44 elk management units are overpopulation objectives. "We don't believe we have too many elk," said Chris Marchion, president of the Montana Wildlife Federation. "What we have is too much elk-harboring." Marchion said his organization supports legislation making it illegal to hold elk on private property.

> **"I feel like a second-class citizen in my own state when I see so much hunting access sold to people with more financial resources."**

Nick Seedgrass, a fifth-generation hunter from the Hi-Line, said that Montana needs more hunting access. "I feel like a second-class citizen in my own state when I see so much hunting access sold to people with more financial resources."

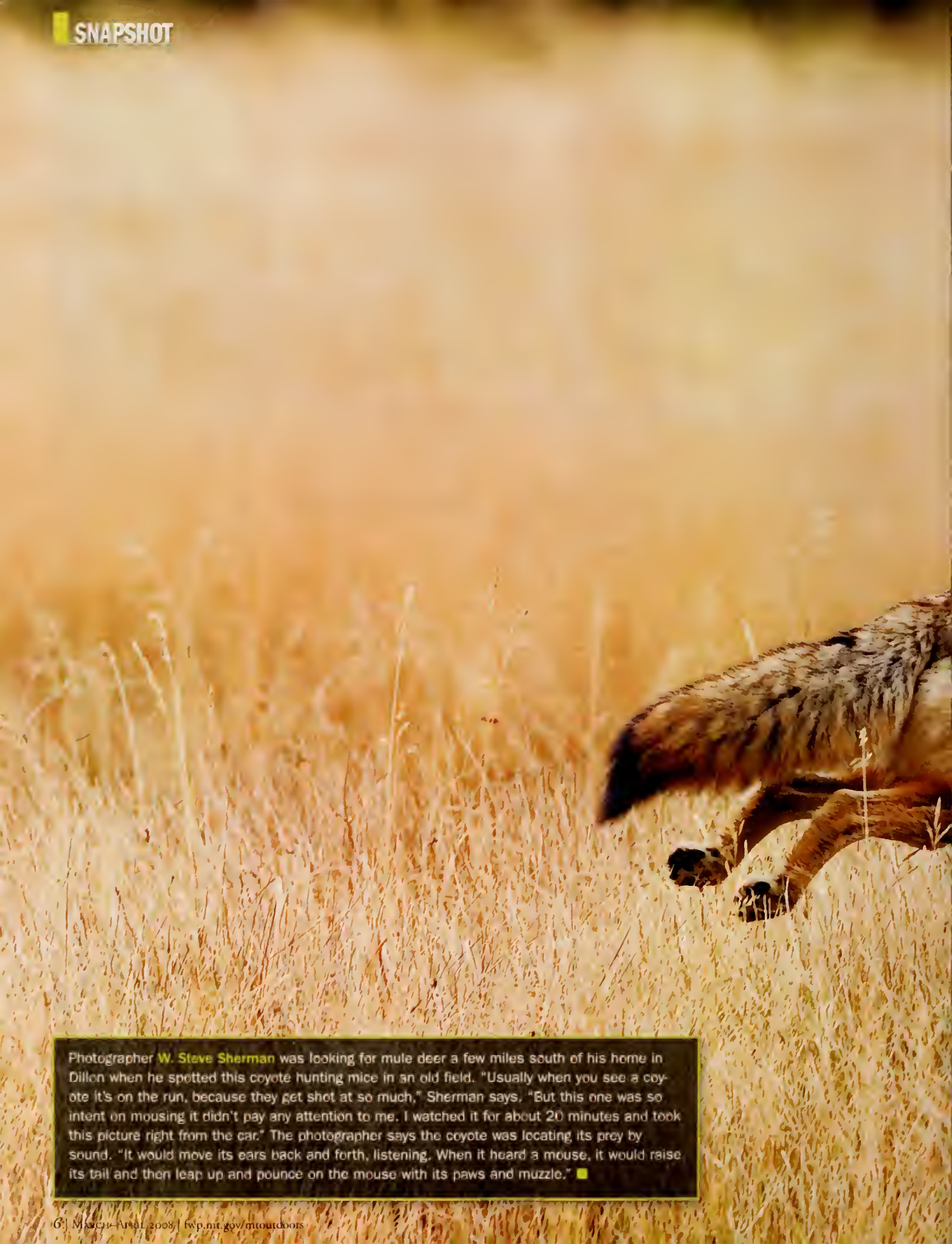
Chuck Rein, a rancher and outfitter north of Big Timber, pointed out that landowners who lease their property to outfitters have been unfairly depicted as greedy. "Many rely on that income to sustain their operation," he said. Senator Keith Bales, a rancher near Broadus, expressed the plight of some landowners when he told the audience, "Many small ranching operations, faced with increased numbers of elk, can't be economically viable," because elk consume forage meant for livestock.

Russ Miller, general manager of the Turner Properties, said private land closed to public hunting can create important refuges. "We have a 70:100 ratio of bulls to cows, and 60 percent of those bulls migrate to public lands," he said. Miller took issue with those who say ranchers are privatizing a public resource. "There is also the issue of taking a private resource—land—and making it public."

Dave Buschena, professor of agricultural economics at MSU and president of a private property rights group, advocated revisiting the Ranching for Wildlife concept, which would provide landowners with elk hunting licenses they could sell.

Dan Vermillion, FWP commissioner and fishing outfitter from Livingston, said that unlike residents in many western states, Montanans are fortunate. "We still have an opportunity to work together to resolve these issues in ways that are mutually satisfactory to all the various interested parties."

Hagener said FWP remains committed to providing more opportunities for Montanans to have a say in elk management. "We encourage the public to become involved and stay involved," he said in his concluding statement. "This is, after all, the public's wildlife."



Photographer W. Steve Sherman was looking for mule deer a few miles south of his home in Dillon when he spotted this coyote hunting mice in an old field. "Usually when you see a coyote it's on the run, because they get shot at so much," Sherman says. "But this one was so intent on mousing it didn't pay any attention to me. I watched it for about 20 minutes and took this picture right from the car." The photographer says the coyote was locating its prey by sound. "It would move its ears back and forth, listening. When it heard a mouse, it would raise its tail and then leap up and pounce on the mouse with its paws and muzzle." ■

PEREGRINE FALCON
CAROL DOUGH

KEEPING AN EYE ON THE WANDERER

Peregrine falcons were taken off the endangered species list nine years ago. Researchers and volunteers continue to monitor these lightning-fast raptors to make sure they stay off.

BY DEBORAH RICHIE OBERBILLIG

On an unnaturally still mid-April day in this usually wind-whipped region, Sharon Fuller and Kate Davis scan cliff faces along the Rocky Mountain Front. The two volunteers are helping with a peregrine falcon population monitoring project led by Jay Sumner, director of the Montana Peregrine Institute. The previous summer, Sumner had recorded a nest site, called an eyrie, here at the Blackleaf Wildlife Management Area, about 20 miles west of Choteau. Fuller and Davis want to see if the nest is in use, indicating that peregrine numbers may be growing in the area. Arms sore from hours of holding binoculars aloft, they scan the distant limestone cliffs hoping to see a peregrine male offer midair prey to a female—a courtship prelude to nesting that confirms an active eyrie. During two days of searching the skies here and along the Dearborn, Sun, and Teton rivers, the volunteers have seen more than three dozen other raptors—including golden eagles, kestrels, and a Swainson's hawk—but so far no peregrines. Then, as if from nowhere, two falcons flash into view above the tilting rock reef. For one moment the birds merge in midair, then break apart and streak downward to vanish on the massive cliff face. "A food transfer!" Davis calls out.

Montana is now home to more peregrines than any time in the past half century. The species, nearly wiped out by DDT, has recovered due to environmental regulations, federal protection, and the cooperative work of government agencies, Indian tribes, conservation organizations, and volunteers. A key player in the peregrine comeback has been Sumner, who says constant monitoring is essential to ensure the species continues to expand its range to historical sites across the state. "The peregrine population has increased since 1999, but the number is still low enough that we need to keep a close watch on eyrie production," Sumner says. "A decline could indicate an environmental problem that needs attention."

BULLETLIKE FLIGHT

In 1961, no one was monitoring peregrine falcons in Montana when Sumner climbed down a cliff outside his home in Livingston to remove a peregrine chick from a nest. Above him, John Craighead held the belay rope and called out encouragement to the teenager. Earlier that year, Sumner had located the eyrie—the first he had ever seen—and knew at once whom to tell: John and Frank Craighead, whose *National Geographic* articles on falconry he had read and reread. Sumner worked up the nerve to call Yellowstone National Park and reached John Craighead, who was studying grizzly bears. To his surprise, Craighead said he would drive up immediately and suggested they take a chick from the nest—legal at the time because no one knew the birds were imperiled—and train it for falconry. The famous wildlife researcher and author insisted that Sumner, as finder, should be the one to do it.

Like so many falcon fans, Sumner has long been fascinated by the peregrine's bulletlike flight, which can exceed 200 mph. He says that to watch one fold its wings and plummet toward a flying bird far below is to witness devastatingly precise and unleashed speed. Sumner has seen peregrine falcons strike agile white-throated swifts and pluck salmonflies

KATE DAVIS

TIMELINE: Peregrine decline and recovery in the U.S.

Pre-WWII An estimated 3,800 peregrine falcons exist in the United States.

1945 DDT agricultural and commercial use becomes widespread. More than 1 billion pounds of the chemical are sprayed from 1945 to 1972.

1962 *Silent Spring*, by Rachel Carson, alerts the public to the hazards that DDT and other chemicals pose to wildlife.

1970 The peregrine falcon is listed as an endangered species (under a law preceding the 1973 Endangered Species Act).

1972 DDT is banned.

1973 The Endangered Species Act passes.

1975 Peregrines are extinct east of the Mississippi River. Fewer than 20 pairs exist west of the Great Plains in the lower 48 states. No documented peregrines exist in the Rocky Mountains.

1974–97 More than 6,000 peregrines are reintroduced back into the wild, 600-plus of them in Montana alone.

1999 The USFWS removes peregrines from the endangered species list.

2005 Montana removes peregrines from the state list.

2007 Sixty-nine peregrine pairs are nesting in Montana.

KATE DAVIS

MALLARD MENACE For years peregrines were known as "duck hawks" for their ability to kill waterfowl (above, chasing mallards, and right, with a green-winged teal). After folding its wings, the falcon dives at speeds exceeding 200 mph, striking prey with such force that ducks sometimes appear to explode in midair. Left: Volunteers scan rocky reefs along the Rocky Mountain Front for peregrines. The crow-sized raptor is distinguished by its short tail, pointed wings, dark cap, and dark "mustache" dropping below the eyes.

MICHAEL H. FRANCIS

DAN KUMMONG

hovering over the riffles of a river. Davis, a certified falconer and director of the nonprofit education and rehabilitation center Raptors of the Rockies, says she once watched a trained hunting peregrine strike a mallard with such force that it knocked the duck's head off.

Named for its wide-ranging nature—peregrine is derived from the Latin word for "wanderer"—the species lives worldwide on every continent except Antarctica. According to the U.S. Fish and Wildlife Service, more than 3,800 peregrines hunted the skies across the United States before World War II. The widespread use of agricultural pesticides starting in the 1940s caused a drastic decline in the number of peregrine falcons, bald eagles, ospreys, and other birds of prey. DDE, a byproduct of DDT, prevents calcium deposition as eggshells form, leading to thin shells that break easily. Across the country, falcon nests failed. By the time biologists figured out that peregrines were in trouble, the population had fallen to just 12 percent of previously known levels. When the species was listed as federally endangered in 1970, only 39 known pairs remained in the lower 48 states.

The 1972 ban on DDT in the United States proved the essential step in reversing the peregrine population decline. However, because so few birds remained, peregrines needed additional help. The Peregrine Fund and other nonprofit groups were formed to save the species from extinction by breeding captive birds and releasing young back to the wild. The groups worked with falconers to develop a technique for hatching birds and then placing chicks on a cliff in a "hack" box with a front screen for the birds to see out. Volunteers fed the birds from a tube, staying out of view to prevent the falcons from associating food with humans. When the birds were ready to fledge (fly), a site attendant opened the door. The young peregrines gradually learned to hunt on their own—as well as avoid predators (golden eagles and great-horned owls), migrate and, if all went well, return to breed and raise wild young.

The hacking program succeeded. Since 1981, more than 600 captive-bred peregrines have been released in Montana. Enough survived to produce offspring that today inhabit 69 active eyries, mostly in the state's western and south-central regions. (An eyrie is considered active if both adults are present in spring and try to nest). Nationwide, more than 6,000 peregrines have been hacked from sites ranging from mountain cliffs to urban skyscrapers. An estimated 1,650 breeding pairs now exist in the United States. So quickly did the peregrine falcon recover that the U.S. Fish and Wildlife Service removed it from the endangered species list in 1999. In 2005, Montana took the bird off the state endangered species list after the population reached the state's recovery goal.

The bird's rapid recovery, says Fish, Wildlife & Parks chief of staff Chris Smith,

Recovering Species
33
USA
"The beauty of the peregrine recovery is you had all these players working together to do the right thing."

shows how the Endangered Species Act (ESA) can succeed. "We took a species in jeopardy, restored the population, removed it from the list, and now are allowing removal of some birds from the wild for falconry," he says. Smith notes that for many species, federal listing comes too late for recovery. "But the peregrine, the grizzly bear, and the wolf are showing that we're making some progress under the ESA that's worth celebrating," he says. In 2007, FWP hosted open houses across Montana on the proposed "take" of five to seven peregrine chicks (a conservative number representing roughly 5 percent of the known production of young) from the wild for falconry. Permits would go only to licensed general or master falconers, who must undergo a two-year apprenticeship and pass a test before they are allowed to possess a falcon. Some peregrine advocates want the state to wait until the falcons reoccupy more geographic regions of Montana. Others say the state has exceeded recovery goals and such a limited take would not affect the population. Then there are those who prefer that wild peregrines be left alone. "The fact that we're even discussing the take of peregrine falcons shows just how successful the recovery has been," says Smith. In January 2008, the FWP Commission agreed to let licensed falconers remove up to three chicks each year.

MONTANA RECOVERY EFFORTS

A cliff on the Red Rock Lakes National Wildlife Refuge was Montana's first hack site, established in 1981. Ralph Rogers, a falconer and retired teacher, hiked up the mountain every day, often with his wife and their two small children, to feed the chicks. The Rogers family spent many other summers tending peregrines, and also raised and released 62 falcons near the Missouri River. "It's fun to go to eyries today and know that many of the birds came from the breeding project in my yard," says Rogers, who now works with Sumner to monitor eyries for the Montana Peregrine Institute. Rogers remembers a day with Sumner in Red Lodge during the mid-1980s, when the two were weary from scanning empty rock faces. "I said, 'Jay, someday we are going to look for these birds and actually find them.' Now we can't even cover all the eyries out there," Rogers says.

Credit for peregrine recovery runs deep, from Congress, which overwhelmingly passed the Endangered Species Act in 1973, to individuals such as Billings Skyview High School students who donated $1,000 in the 1980s to help with peregrine restoration in honor of the school's falcon mascot. Arnie Dood, coordinator of FWP's Threatened and Endangered Species Program, says the raptor's restoration might have faltered without the cooperation and commitment of federal biologists, state and national falconer associations, the Bureau of Indian Affairs, Bureau of Reclamation, Bureau of Land Management, and Salish-Kootenai Tribe. "The beauty of the peregrine recovery is you had all these players working together to do the right thing," Dood says. "That's different from so many other wildlife

Writer Deborah Richie Oberbillig lives in Missoula.

conservation efforts that bog down in conflict and controversy." FWP continues to support peregrine recovery by helping fund the Montana Peregrine Institute's monitoring program.

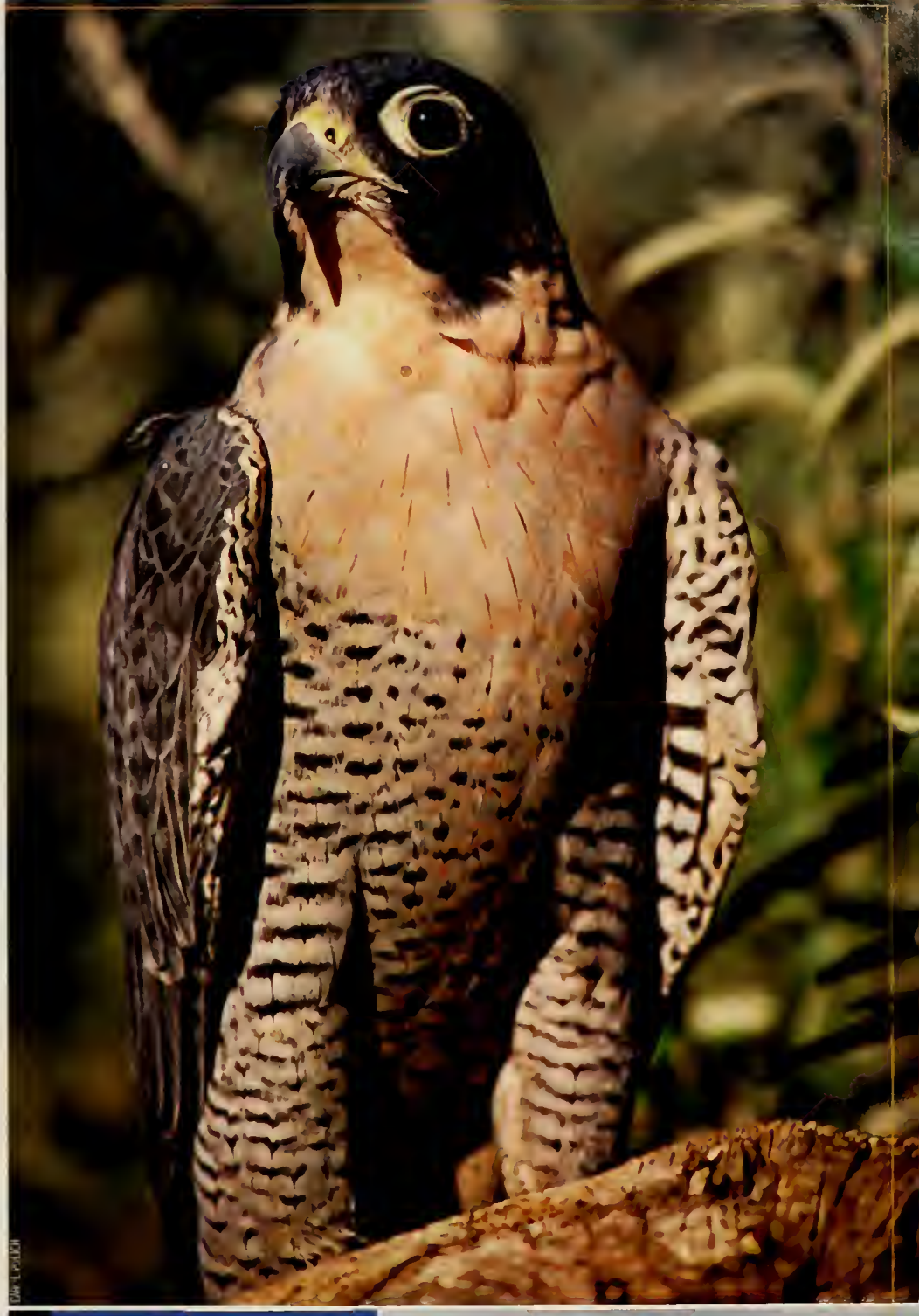
Under federal law, states must conduct monitoring surveys every three years until 2015 to ensure the peregrine continues its positive path to recovery. Sumner has chosen to survey Montana's birds every year, starting in 1999, despite FWP funding for only one in three years. He says monitoring must continue for at least ten consecutive years to assess population health—which includes nesting success, number of young, and habitat threats—and to document new eyries.

Last year Sumner noticed a worrisome decline in peregrine production. After averaging 1.94 young per eyrie from 1994 to 2006, peregrine production dropped to 1.6 in 2007. "We don't know why," Sumner says. "It could be due to heavy metals, West Nile virus, or other environmental causes. But if we weren't monitoring, we wouldn't even know that there might be a problem that needs investigating."

Each year Sumner drives 20,000 miles and floats one or two major rivers as he monitors peregrines. March marks the start of the season, when he and volunteers check cliffs for peregrine occupancy and new nests. During May, the birds are quiet as the females concentrate on incubating the eggs. From the last week in June through July, Sumner and his helpers return to look for evidence of nesting success, a difficult task because the birds select high ledges and the young birds remain mostly hidden until ready to fly.

Sumner hopes to raise money for satellite tracking to determine where Montana peregrines winter. He is concerned about threats in places like Central and South America, where DDT is still used. In the meantime, he will continue scanning Montana's skies and cliffs looking for peregrines returning to their historical habitat. A few years ago, Sumner saw a pair on the cliff near Livingston where, as a teenager, he first held a chick in his hands. After 45 years, he once again heard the *kek kek kek* of wild peregrines echoing off the rocks. "That was a wonderful feeling," he says.

For more information on peregrine falcons and the Montana Peregrine Institute, visit the organization's website: montanaperegrine.org.



NOT OUT OF THE WOODS YET

Though peregrine numbers continue to increase, so few live in Montana (just 69 breeding pairs) that researchers such as Jay Sumner (right), president of the Montana Peregrine Institute, monitor the bird's reproductive success each year. In 2007, production declined 17 percent from the ten-year average. Possible causes, says Sumner, could be heavy metals in the environment, West Nile virus, or last year's cold, wet nesting season.

SPECIAL REPORT

STATE OF THE

GRIZZLY

Now that the Yellowstone bears have been delisted, what's in store for Montana's other grizzly populations?

WILDERNESS ICON Montanans, who have long admired the grizzly as a symbol of the state's wild heritage, began protecting the species from unregulated hunting in 1923. Due to abundant habitat on public and private land, grizzly populations are increasing in large parts of western Montana. Each year more grizzlies end up in culvert traps (right), to be radio-collared and released for observation.

BY CHRISTINE PAIGE

"We've got a bear," says Tim Manley, Montana Fish, Wildlife & Parks grizzly management specialist, as he noses his truck up a dirt track toward a steel culvert trap for a better view. A large, dark shape sits hunkered in the trap's dim tunnel, shying away from the biologists peering in. Manley and his field crew spend each summer and fall trapping and tracking grizzlies in northwestern Montana. Their work is part of a long-term study to determine whether the population is increasing, decreasing, or stable. Like this mature sow, grizzly populations in much of Montana appear to be in good shape. The federal government has already removed one population from its list of threatened species and has begun looking closely at delisting another. What Manley and other bear specialists learn from this female bear and others like it will help guide management decisions on how best to conserve a species that nearly disappeared from the lower 48 states but in recent years has made a steady—and in some cases surprising—comeback.

DEREK REICH

Biologists estimate that before European settlement 50,000 to 100,000 grizzly bears, also known as brown bears, ranged from Mexico to Alaska. Roughly half the population lived south of Canada, from the West Coast east to the central Great Plains. By the 1970s, only 2 percent of the grizzly's historic range remained intact in the lower 48 states—most of it in Montana. Agricultural land conversion coupled with predator control had reduced the grizzly population to an estimated 1,000 bears south of the Canada border. In 1975 the species was listed under the Endangered Species Act (ESA) as federally threatened. Montana, containing the largest grizzly population in the contiguous United States, continued a limited grizzly hunt until 1991. Environmental groups successfully petitioned to halt the season, arguing that the state lacked data to prove hunting harvest was not harming the population.

Today approximately 1,400 grizzly bears survive in five ecosystems in Washington, Idaho, Wyoming, and Montana, sustained by habitat on public and private lands. The Northern Continental Divide and Greater Yellowstone ecosystems support the largest populations, while small numbers hang on in the Cabinet-Yaak, Selkirk, and North Cascade (Washington) systems. The Selway-Bitterroot region is designated as a sixth recovery zone, though there has been no verified evidence of a resident grizzly population there for more than half a century.

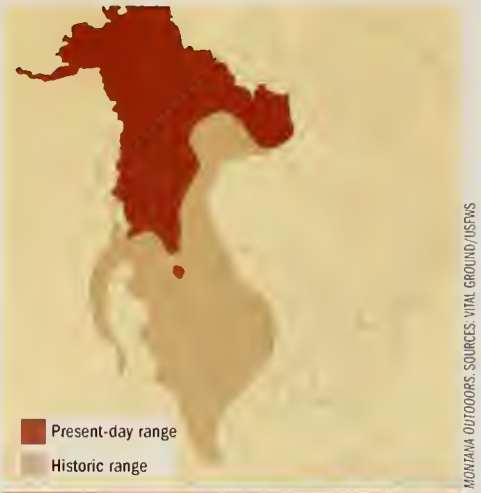
FIRST OFF THE LIST

When the species was listed, biologists estimated that fewer than 200 grizzlies remained in the Greater Yellowstone Ecosystem, which spans Yellowstone and Grand Teton national parks, parts of four national forests, and other public lands in Montana, Idaho, and Wyoming. At the time, no one guessed that in three decades the population would rebound. But after years of cooperative recovery efforts, and despite being isolated from populations to the north, the Yellowstone population has rebounded, growing at 4 to 7 percent per year in the last decade. Today 550 to 600 bears inhabit a 14,000-square-mile expanse of the Greater Yellowstone Ecosystem. Having met all the criteria set under a federal recovery plan, the population was removed from the list of federally threatened species in March 2007.

Delisting has not exactly left Yellowstone grizzlies out in the cold. If anything, a federally approved conservation strategy, state grizzly management plans, and ongoing population monitoring overseen by the Interagency Grizzly Bear Study Team focus even more resources on the recovered population than before recovery. State and federal biologists conduct annual surveys for females with cubs, monitor population trends, track reported mortalities, sample DNA to detect bear movement, measure the condition of captured bears, and monitor the status of natural bear foods. Charles Schwartz is the study team leader. He says tracking these indicators provides greater insight into the population's status and an early warning of problems.

Some view the Yellowstone delisting as premature. In 2007 several conservation groups sued to overturn the decision. They argue that the Yellowstone population remains significantly vulnerable to genetic isolation from other populations, habitat loss from rapid residential and energy development, and threats from climate change to grizzly habitat and food. Without the force of federal protection, they warn, the Yellowstone recovery will unravel.

There is little question that one key food



MONTANA OUTDOORS; SOURCES: VITAL GROUND/USFWS

MONTANA STRONGHOLD At one time grizzlies ranged as far south as Mexico City and east to the Dakotas. By 1975, when the species was federally listed, the range south of Canada had shrunk to just a few ecosystems in the northern Rocky Mountains—most of them in Montana. The state held a regulated hunting season until 1991, when a federal court ruled that Montana lacked data to prove hunting was not harming the grizzly population.

MONTANA OUTDOORS; SOURCE: IGBST

TIMELINE: Grizzlies in Montana

Early 1800s: Western explorers encounter an animal far more ferocious than the black bear. Menwether Lewis calls it a "bear of the large vicious species."

1921: Montana bans bear-baiting and hunting bears with dogs.

1923: Montana becomes the first state to designate grizzlies as a protected game animal.

1975: Grizzlies are listed as threatened under the Endangered Species Act.

1991: A lawsuit forces Montana to close its regulated hunting season.

2007: The USFWS removes Yellowstone grizzlies from the list of federally threatened species.

1750 | 1800 | 1850 | 1900 | 1950 | 2000

Pre-1800: At least 50,000 grizzly bears live in North America, ranging from Alaska to Mexico. Roughly half are thought to live in the lower 48 states.

1840–1900: Grizzly numbers begin a rapid decline. Causes include habitat loss due to homesteading and railroad construction, predator control, and the unregulated overharvest of bison, elk, and other grizzly prey.

1983: Governor Schwinden signs a law naming the grizzly bear as Montana's state animal.

Montana Fish, Wildlife & Parks

2003–05: FWP drafts management plans for grizzlies in Yellowstone and northern Montana.

source—whitebark pine—is threatened by complex changes in the ecosystem. Global warming, white-pine blister rust, and mountain pine beetles seriously threaten the whitebark. Its oil-rich pine cone seeds are essential for fattening bears in years when other natural foods are scarce. If changes in food availability cause Yellowstone grizzly numbers to drop, the bear could be relisted as a threatened species. Excessive bear mortality, declining habitat quality, and other triggers could also prompt a reassessment.

Montana's other robust grizzly population lives in the Northern Continental Divide Ecosystem. This diverse, rugged, and largely roadless area covers roughly 9,600 square miles. It encompasses the Bob Marshall, Great Bear, Mission Mountain, and Scapegoat wilderness areas, as well as Glacier National Park and surrounding national forests, private forests, and tribal lands. The ecosystem is considered the greatest stronghold for grizzlies in the lower 48. It butts up against the grizzly bear populations of southeastern British Columbia and southwestern Alberta, a connection critical for the long-term viability of populations on both sides of the U.S.–Canada border.

Grizzlies in this deeply forested ecosystem are difficult to count. For years, biologists estimated the population at between 600 and 700 bears. Recently they have established a more accurate figure. Kate Kendall, a research biologist with the U.S. Geological Survey, supervised a 2004 population survey, the largest of its type ever undertaken. Researchers collected more than 34,000 samples of black and grizzly bear hair, snagged on baited barbed-wire enclosures, for DNA analysis. According to Kendall, it may still be a year before the final population estimate is established. "We're doing everything we can to ensure that the data and analysis hold up under the most intense scientific and legal scrutiny," she says.

The DNA project will provide a baseline population number, but managers also need to know, as a prerequisite for delisting, if the population is increasing or at least stable. Rick Mace, FWP grizzly research biologist, spearheads a long-term population-trend monitoring project for the Northern Continental Divide Ecosystem. Starting in 2004, Mace and FWP grizzly management specialists began trapping, radio-collaring, and tracking female grizzlies to monitor the bears' survival and cub production. "Right now, the population is above the minimum size needed to be viable," says Mace. "But there needs to be both a viable population size and a positive or stable population trend. If the trend is declining, we've got a problem." Aside from Mace's study, the number of bears showing up on the fringes of the ecosystem suggests an expanding population. Grizzlies are now commonly seen along the Rocky Mountain Front from Canada to Montana Highway 200, sometimes ranging into historical prairie habitats to the east.

DEREK REICH

DEA VOGEL

WEIGHED, PROBED, COLLARED Grizzlies are the most-studied predator in North American. After attaching radio collars to trapped bears, researchers track the animals to learn their habitat needs, survival rates, and reproduction rates. In 2004, scientists conducted one of the largest bear population studies ever in the 9-million-acre Northern Continental Divide Ecosystem. Researchers collected more than 34,000 samples of bear hair, snagged on baited barbed-wire enclosures. Due to the need for rigorous DNA analysis, the final population number is still being processed.

THE SMALLER ECOSYSTEMS

Montana's smallest grizzly population finds refuge in the 2,600-square-mile Cabinet-Yaak Ecosystem. Only 35 to 45 bears survive in the ecosystem, and even this tiny population is divided. Roughly 25 to 30 bears live in the northern part of the zone, contiguous with grizzly habitat in Canada and Idaho's Selkirk Mountains. Roughly 10 to 15 bears seem to be isolated south of the Kootenai River. So far, DNA and telemetry studies have revealed no bear movement between the two areas.

In small populations, every bear death greatly increases the risk of the entire population dying out. The U.S. Forest Service has closed many old logging roads in national forests to provide secure bear habitat, but the closures are fought by off-highway vehicle riders who recreate on the routes. Other threats to the Cabinet-Yaak population include encroaching residential development in the scenic mountain valleys, growing traffic on U.S. Highway 2, and a railway line with 40 or more trains each day. FWP recently hired a new bear specialist based in Libby to work with landowners on conserving private land habitat and reducing bear conflicts. The agency is trying to give the Cabinet grizzlies a big boost by transplanting bears from other ecosystems

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GRIZ ON THE GO For decades, grizzlies thrived in Yellowstone and Glacier national parks and surrounding forests. Under federal protection, populations have expanded beyond the biological carrying capacity of those wildlands, spilling out into areas that have not seen grizzlies in decades. Biologists are learning that grizzlies roam much farther than previously believed, sometimes crossing highways and traveling hundreds of miles. These wanderings often lead to interbreeding among populations, important for maintaining genetic health. Biologists say conserving linkage areas between ecosystems is essential for the species' long-term survival.

into the most remote reaches of the range. In the early 1990s, biologists relocated four female grizzlies to the Cabinets from British Columbia, hoping the sows would mate with resident males. Recent DNA testing from hair snares revealed that at least one of the females produced two female cubs, which later reproduced, resulting in six or seven grizzlies that are direct descendants of the early transplants. With funding from the FWP Foundation, biologists have recently augmented the population with two female grizzlies from the Northern Continental Divide Ecosystem. "We can recover bears in these smaller systems," says Chris Servheen, coordinator of the USFWS Grizzly Bear Recovery Program, "but it takes a different type of effort and it takes time."

Christine Paige is an independent wildlife biologist and science writer who lives in the Bitterroot Valley.

Spanning 5,600 square miles of central Idaho and western Montana, the Selway-Bitterroot Ecosystem contains the largest area of designated wilderness in the Rocky Mountains. Historically, grizzlies were widespread and abundant there, yet for 60 years no verified evidence of the species existed. That changed in September 2007, when a black bear hunter mistakenly shot a young male grizzly on upper Kelly Creek in the northern Bitterroot Mountains, 3 miles west of the Montana–Idaho border. The Kelly Creek bear was the first confirmed grizzly in the Selway-Bitterroots since 1946. Genetic analysis revealed that the animal had come from the Selkirk Mountains, 140 miles and across two major highways to the north.

Remote and still rich in grizzly habitat, the Selway-Bitterroots present the best prospect for expanding the bear's recovery in the lower 48 and connecting Yellowstone grizzlies with populations to the north. After years of study, planning, and public comment, the USFWS decided to restore grizzlies to the Selway-Bitterroots by establishing a "nonessential experimental" population of 25 bears over five years. The plan was set aside by the Department of Interior in 2001, putting reintroduction on hold. But no one told the bears, which could move to the area on their own. "How grizzlies get to the Selway-Bitterroots has huge management implications," says Chris Smith, FWP chief of staff and chair of the Interagency Grizzly Bear Committee. "If grizzlies recolonize the Bitterroots on their own—and there's no reason to expect they won't—they bring the full weight of the ESA with them as a protected threatened species. That would mean very limited management options. On the other hand, if grizzlies are reintroduced as a 'nonessential experimental population,' the states would have much more management flexibility, as has been the case with wolves in Yellowstone."

A single bear does not constitute a population, but where one has traveled others may follow. The USFWS, with help from the U.S. Forest Service, FWP, and Idaho Fish and Game, plans to carry out a new field survey of the northern Bitterroots in 2008, using lure stations with hair snares for DNA analysis.

MAINTAINING CONNECTIONS

Montana's interest in seeing grizzlies return to the Bitterroots reflects the state's long-standing commitment to conserving and managing a secure and recovered population throughout the state's western region. "FWP envisions management programs that preserve biological connections between all its grizzly populations and maintain links with populations in Canada and eventually the Bitterroots," says Arnie Dood, who coordinates the FWP Threatened and Endangered Species Program. Over the past several years, the agency has produced a comprehensive grizzly management plan that will guide management over the next decade. "We're trying to fit grizzly bears into western Montana as a valued wildlife species, just like the mountain lion and the black bear," says Dood.

That may be a tight fit in some areas. As the great bears expand their range in western Montana—either on their own or with help from conservation agencies—they increas-

ingly run into a two-legged species expanding its range into the same scenic mountainous landscapes. People are the primary cause of grizzly deaths in Montana. Grizzlies are killed by highway traffic, trains, poachers, and hunters who mistake them for legal black bears. Housing developments and accompanying roads diminish habitat and restrict grizzly movement between ecosystems. People and development bring more pet food, bird feeders, garbage cans, and picnic coolers into grizzly territory. When natural foods are scarce, these attractants draw grizzlies near people and livestock, forcing state and federal agents to kill problem bears.

Far fewer grizzlies receive that death sentence thanks to Manley and FWP's four other bear specialists stationed across western Montana. The specialists work with communities in each ecosystem to educate homeowners and recreationists on how to properly secure food and garbage. In addition, the National Wildlife Federation (NWF) and Defenders of Wildlife run a program that helps communities and individuals install bear-resistant dumpsters and garbage cans. "During the six months bears are outside their dens, they become vacuum cleaners searching for the highest-calorie foods they can find,"

> "We're seeing an evolution away from arguing about status and litigation toward finding solutions on the ground to make living with grizzlies safe for both people and bears."

says Sterling Miller, NWF grizzly specialist.

Grizzly predation on livestock is another problem, particularly on the Rocky Mountain Front and around Yellowstone National Park. Wildlife biologists and bear specialists remove grizzly repeat offenders and work with ranchers to fence livestock and eliminate garbage dumps. Defenders of Wildlife compensates

The Road To Further Grizzly Delisting

JET CHASE

Now that the Yellowstone population has been delisted, all eyes are turning to Montana's other grizzly ecosystems, especially the Northern Continental Divide (NCDE). There is some speculation that soon-to-be-released results of a population survey will indicate that NCDE grizzlies may be close to delisting.

Not so fast, say FWP and USFWS officials. Much additional work needs to be done to determine the status of grizzlies in that ecosystem and elsewhere in Montana. For example, the Northern Continental Divide population estimate will only be a snapshot of grizzly numbers in 2004, when the survey was conducted. To learn if bear numbers are stable or increasing, biologists will have to wait several more years for the results of a long-term grizzly mortality study being conducted by FWP research biologist Rick Mace. Other delisting criteria include a minimum number of females with cubs, the distribution of these family groups across an ecosystem, and mortality limits at or below a level the population can sustain.

Another factor on the road to further delisting is whether the NCDE population should be considered on its own or as part of a larger "distinct population segment" that includes the other northern ecosystems. In the early 1980s, when the original recovery plan was drafted, the USFWS identified recovery zones in those ecosystems based on what were once considered distinct populations. Scientists believed that bears rarely, if ever, moved from one population to another. Since then, grizzly researchers and managers have collected vast amounts of DNA and radiotelemetry evidence showing that bears travel widely among ecosystems.

The Interagency Grizzly Bear Committee (IGBC) oversees all aspects of grizzly management and recovery. It is currently evaluating existing data to determine if the recovery zones defined in the original plan still reflect distinct populations, or whether the NCDE, Cabinet-Yaak, and Selkirk populations should be considered a single population. The ramifications of linking what appears to be a strong NCDE population with the smaller ones to the west are considerable. "If a new consolidated population were delisted, that would remove protection from bears in the Cabinet-Yaaks," says Chris Smith, FWP chief of staff and IGBC chair. "Or the U.S. Fish and Wildlife Service could decide not to delist the consolidated population until numbers of Cabinet-Yaak bears increased, which would delay delisting the NCDE population."

There are plenty of "what-ifs" regarding further grizzly delisting, says Smith. But he and other committee members want people to begin discussing various possibilities and ramifications. "Our goal is to inform and involve the public throughout the process, and not surprise them with a bureaucratic outcome they never heard of," he says. ■

ranchers for livestock lost to grizzlies as a way to reduce the economic burden on those who live with growing predator populations. To reduce conflicts, the National Wildlife Federation buys, from willing sellers, grazing leases where grizzlies habitually harass livestock. The organization provides ranchers fair compensation, allowing them to secure alternate grazing allotments elsewhere, while the problem allotments are retired from grazing.

FWP, other public agencies, and nonprofit land trusts also work with private landowners to protect habitat and linkage areas using easements and other conservation tools. Wildlife crossings built at highway trouble spots reduce animal mortalities and increase public safety. For example, where U.S. Highway 93 runs through the Flathead Indian Reservation, roughly 50 wildlife crossings—mainly bridges and rectangular culverts—will be constructed over the next several years. As if endorsing the project, a female grizzly was seen in fall 2007 using a newly constructed underpass near Ravalli, just south of the National Bison Range. "We're seeing an evolution away from arguing about status and litigation toward finding solutions on the ground to make living with grizzlies safe for both people and bears," says Smith.

NPS ARCHIVES

LIVING WITH WILDLIFE FOUNDATION

FED BEARS Though grizzlies are effective predators, they scavenge rotting carcasses (opposite) as well as human garbage (above). FWP bear specialists work with homeowners and communities to secure garbage and food to keep grizzlies out of trouble. The Living with Wildlife Foundation, in cooperation with FWP and other agencies, tests residential trash bins (right), dumpsters, and other garbage containers. On its website—lwwf.org—the foundation publishes a list of products that pass stringent requirements.

As bear numbers grow and grizzlies return to habitats they have not occupied for decades, the challenge to both people and bears to find ways to live together increases. "Grizzly bears will always be a complex and controversial species to manage," says Smith. "But I'm encouraged by the attitude I see, the pride Montanans take in having healthy grizzly populations, and their desire to accommodate these great animals."

LEAVING THE LIGHT ON FOR BEARS

In areas like the Cabinet-Yaak, where the grizzly population is small, a single bear death is a major loss. When that bear is a sow with one or more cubs, the young bears will likely die without their mother. The FWP wildlife rehabilitation center in Helena temporarily houses orphaned animals, primarily bears, until they can be returned to the wild or placed in zoos. "We can hold cubs here, keep them safe and well fed, until they are ready for release," says Patty Sowka, the center's director.

Most of the bruins coming through the center are black bears. The bears are never handled and are kept separate from humans. Volunteers feed the animals road kill as well as produce donated by Wal-Mart and Costco, hiding the food so the bears learn to forage as they would in the wild. Visitors can watch the bears on a live video camera, but the animals never see humans. "We do everything possible to minimize contact," says Sowka. "We don't want the bears to ever associate food with people."

Most of the young bears are held until fall, when they are hauled half-asleep to forested areas and then placed into natural or constructed dens.

So far only a few young grizzlies have come to the center. Twins whose mother was killed after raiding livestock stayed there for several months. Bear specialists believed the cubs may have learned livestock depredation from their mother, so the pair was eventually placed in the San Francisco Zoo. A few adult grizzlies have also been placed in zoos. Thomas Baumeister, chief of FWP's Education Bureau, says that eventually some orphaned grizzly cubs could make their way through the center and back to the wild. "But we would only do that after careful review by bear specialists, and only if we were certain they would not return to areas of human habitation," he says.

Meanwhile, the rehabilitation center will continue looking for zoos to take any grizzlies it receives. "The wildlife rehab center saves grizzlies, and that's important, even if the bears don't go back into the wild," Baumeister says.

KENTON ROWE

MELON TIME Patty Sowka, the wildlife rehab center's director, slices donated fruit to feed cubs temporarily housed at the Helena facility.

PLAYING IT TOO SAFE?

By making it harder for kids to explore and play in the outdoors, we may be losing future conservationists.

BY BRIAN MAFFLY

PHOTO BY LUKE FURAN

SONY

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My siblings and I were born in the 1960s. Looking back at our misadventures as kids, it seems like no small miracle that we survived a childhood where everyone walked to school, built tree houses, and almost never wore seat belts or helmets.

We flew off our bikes, fell from trees, and sprinted from angry dogs. Our parents gave us ample leeway to explore our surroundings, and we took advantage of that freedom. Certainly we suffered some traumas from the unsupervised outings—I once nearly drowned in a septic pit—but our lives became richer, even with the near-tragedies. We learned the consequences of risk-taking. We learned how to scramble, improvise, and think for ourselves. And we learned to play by ourselves, without referees and parent committees keeping constant watch. Instead of being safely corralled indoors, my friends and I explored our neighborhood and the nearby regional park on our own terms. We learned how to feel wonder and how to enjoy just being outdoors. As an adult, these skills have equipped me well for weathering life's ups and downs. Like many adults, I'll take a hike up Montana's Hyalite Peak over a Prozac prescription any day. So the big question: With so much to gain from direct experience with the outdoors, why is my generation failing to pass this value on to our kids?

From the 1960s through 1980s, social norms underwent a massive shift that resulted in a severed connection between young Americans and the outdoors. As young adults, Baby Boomers flocked to mountains, national parks, lakes, and rivers. But after marrying and settling down, they kept their children indoors. The disconnect between youngsters today and the outdoors is documented in Richard Louv's 2006 book *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*, which has sparked a national discussion on children and their relationship with the natural world. A youth advocate and journalist, Louv attributes kids' outdoors avoidance to the allure of video entertainment, the disappearance of unstructured play, increased legal liability, and the nation's growing culture of apprehension. He says parents increasingly fear West Nile virus, Lyme disease, skin cancer, and other highly publicized dangers of the natural world, as well as human predators who might lurk there.

"Healing the broken bond between our young and nature is in our self-interest—not only because aesthetics or justice demands it, but also because our mental, physical, and spiritual health depend upon it."

The implications for the future of what Louv calls "nature-deficit disorder" are frightening and far-reaching. The World Future Society predicts the disorder will grow as a major health threat. Conservationists predict a possible decline in the number of citizens who appreciate and fight for the stewardship of wildlife habitat, parks, and other public lands. Officials in many western states report declines in park visitation as well as hunting and fishing participation—all bellwethers of society's connection with the natural world. "If people don't make a connection with wildlife and the outdoors, they might not make a commitment to invest in protecting these resources," says Thomas Baumeister, Education Bureau chief for Montana Fish, Wildlife & Parks. "Where will the next generation of stewards come from? In Montana I still view the glass as half full, but if we can't figure things out in Montana, then we're in big trouble nationwide."

To bring public attention to the issue of kids and the outdoors, Louv launched the National Forum on Children and Nature, a broad-based campaign co-chaired by four governors, including Montana's Brian Schweitzer. "Healing the broken bond between our young and nature is in our self-interest—not only because aesthetics or justice demands it, but also because our mental, physical, and spiritual health depend upon it," says Louv. "And so does the health of the Earth. For decades, environmental educators, conservationists, and others have worked, often heroically, to bring more children to nature. Now we're starting a grassroots movement to leave no child inside, uniting people from across political, cultural, and religious divides. By bringing business and government leaders to the table, the forum will create a new level of commitment and action."

Previously a resident of Bozeman, writer Brian Maffly is currently a reporter for the Salt Lake City Tribune.

SETTING AN EXAMPLE Above: Megan Ault embraces her son Dylan after they scaled Granite Peak. Such interaction—along with allowing kids to explore the outdoors unsupervised—can foster a love for nature lacking among today's indoor-oriented youth (left).

Baumeister is working with other education specialists to develop antidotes to nature-deficit disorder in Montana. But the best chance of a cure won't come from government programs, he says. Parents need to incorporate connections with nature into their everyday lives and urge civic leaders to make communities more amenable to outdoors play, walking, bicycling, and nature exploration. "If kids aren't used to walking to school, they will likely be less interested in hiking to a backcountry lake or going hunting or camping," Baumeister says. Walt Timmerman, recrearion chief for FWP's Parks Division, agrees that parents, not government agencies, are key to revitalizing the Huck Finn in America's youth. "You need parents finding ways to get their children outdoors," he says. "If we focus on the kids alone, we miss an essential part of the equation."

My own experience as a parent of a four-year-old girl tells me that most kids would thrive in the outdoors if their parents would give them the chance. Turned loose in the backyard, my daughter will dig through the compost pile with a trowel in search of bugs, and climb the fence to loot my neighbor's apple tree. I often seek advice from other parents to learn new techniques to further engage her in nature and self-discovery. The wisest words come from Megan Ault, a journalist in Bozeman and mother of three boys, ages 9, 11, and 14. "When they're little, you have to go at their pace," she says. "For example, when you take them camping, you might spend all your time in the campsite, turning over rocks and looking at insects."

No plug-ins outdoors

Experts on youth say that the lives of most children today differ from those of children 30 or 40 years ago. Louv notes that kids now take part in far more structured play such as league sports, music lessons, and other activities where adults are always present. TV shows, computers, and electronic video games compete for kids' time. (One suburban fifth-grader told Louv that he likes to play indoors because "that's where all the outlets are.") Then there's the growing fear of "stranger danger." Despite police data showing that child abductions are rare (roughly 100 each year nationwide), parents conditioned by around-the-clock news reports fear that their unattended child will be whisked away in a dark sedan. What's more, the exurban landscape, devoted to the automobile, makes walking and bicycling difficult or even dangerous. Children are cut off from playgrounds and woods unless a parent loads them into a car and ferries them across rivers of asphalt.

Another factor, says Baumeister, is increased apprehension about the natural world. "There is a fear of nature itself—of predators, insects, snakes, diseases, you name it. People have become accustomed to viewing nature as a place with an endless list of things that can harm them. So they stay indoors and keep their kids inside, too." As a result, kids are not learning such simple joys as building a tree fort or catching a butterfly—much less how to catch a fish, paddle a canoe, or pitch a tent.

Limited outdoors exposure leads to less participation in outdoors recreation. The national decline in hunting, for example, is

An educator's warning

As an outdoor educator for the past 24 years, Cassie Carter has observed a growing disconnect between young Montanans and the natural world. She directs the Montana Outdoor Science School in Bozeman, which serves 4,500 children each year through its hands-on outdoors programs and another 3,000 at events such as the Bridger RaptorFest. Carter says that even with access to the science school's programs, most kids in the Bozeman area have little connection with the outdoors. Some excerpts from her interview with *Montana Outdoors*:

On electronic media: "We have seen a transition in the last 20 years where children are having fewer opportunities for true experiences, especially with the rise of electronic entertainment. So you're seeing kids who are not going out and doing anything. They are not interacting with other kids. They're interacting through electronic media and mistaking some of that for actual experience."

Lack of patience: "We're also creating a generation that will be making important decisions as adults without ever having true experiences and true focus to see something through. As a nation we have become less and less patient. Most things worth doing take time and investment. We're not seeing kids developing the patience and focus to make that kind of investment."

Parents' apprehension: "Another thing we are seeing is fear created by societal pressure on parents to protect their children no matter what, and by how fast the media condemns parents if anything happens to their child. So you have parents who simply don't want their kids to go outdoors."

Health risks associated with indoors life: "The idea that kids would walk someplace for an activity is less of an expectation. And with kids having less and less activity, there is an increase in obesity and obesity-related illness. Studies document the connection between Attention-Deficit Disorder and the amount of television that kids watch." ■

PLENTY TO DO Montana parents can help connect their children to the outdoors with a wide range of activities statewide. Clockwise from upper left: Watching birds at Freezout Lake Wildlife Management Area; learning to use a bow and arrow; camping at a state park; ice fishing for northern pike at Lake Frances; hunting wild turkeys; harvesting a Christmas tree; picking huckleberries. Though parents can inspire a love of the outdoors, youth advocates say the best thing for kids is to simply let them play outdoors on their own. During unsupervised play, children learn to invent, create, and resolve conflicts. Says one outdoors educator, "Kids have to be able to make mistakes. They may trip and fall, but they pick themselves up. And they learn something."

closely tracked by state conservation agencies, which rely on license dollars to support wildlife management programs. Montana's hunting numbers have remained stable, with one in five Montanans, or 188,000 residents, hunting in 2005. But those are the strongest numbers per capita in the country. Several states have seen declines in hunting license sales approaching 50 percent in the last two decades. "We're still the top state in terms of hunter participation per capita," says Baumeister. "But the bad news is that the average age of our hunters increases by about one year every year. What will happen when the Baby Boomers quit hunting? Will there be enough young hunters to take their place? The hunter has always been the champion of wildlife and protecting wildland habitat. It's always been the hunter footing the bill. There is rarely any other public money available for wildlife management and habitat conservation."

A related concern is that the decline in national park visitation may reduce public support for these sites. Visits to Glacier National Park peaked in 1993 at 2.2 million and then dipped to 1.9 million in 2005. More than 3 million people visited Grand Teton National Park in 1970, but fewer than 2.5 million came in 2005. "Why would people care about the conservation of these public places if they've never seen them?" asks John Keck, with the National Park Service in Wyoming.

Louv and others argue that parents must regain confidence in their children's resilience and overcome their own fear of nature. Otherwise children will never have the freedom to explore, take risks, and learn about the world and themselves. Many playgrounds across the country, says Louv, actually post signs that say "No Running." According to Cassie Carter, director of the Montana Outdoor Science School in Bozeman, parents today are under great social pressure to shield their children from all risk, no matter how theoretical or imaginary. "Car seats and bicycle helmets have prevented countless injuries," she says, "but they help create a sense that children must be protected from all things at all times. Kids have to be able to make mistakes. They may trip and fall, but they pick themselves up. And they learn something."

A sedentary life indoors is by no means safe. Too much inactivity can lead to childhood depression, obesity, and Attention-Deficit Disorder. "Parents are more concerned about their children going outside unattended than sitting in front of a video game six hours a day eating potato chips," says Keck.

No down time

Many youth experts say kids need more unstructured play, which builds confidence and coping skills. Unfortunately, most youth activities these days are as regimented as a military parade. "Kids don't have a lot of down time anymore," says Molly Murano, the director of a Montessori preschool in Salt Lake City, where I recently moved with my daughter. "Down time is where their selves are forming. If you're a child out in the backyard and no one is there, you have to use your imagination to engage the world around you."

Ault believes that time spent outdoors with her three boys promotes family unity. "Camping is important," she says. "You're outside, eating good food, and having eyeball-to-eyeball contact with each other." To mark the passage of her oldest son Dylan's 13th birthday, Ault took him on an ascent of Granite Peak, Montana's highest mountain. She plans similar coming-of-age celebrations for the other two.

Why are the Ault boys becoming avid outdoorsmen while growing numbers of kids their age remain inside, a candy bar in one hand and a video game in the other? It may boil down to something as simple as their mother's interest and participation in the outdoors. "Parents need to unbusy themselves," says Ault. "You can't be outside with your kids if your life is too busy with other things. Kids watch us like hawks. We can't tell them to stop watching TV and talking on their cell phones if that's what we're doing all day."

HELPING YOU GET YOUR KIDS OUTSIDE

Montana Fish, Wildlife & Parks provides many programs for children and families. State parks, for example, are great places for families to camp, hike, fish, and learn about the natural world. Many parks, such as Lone Pine and Giant Springs, have interpretive centers, outdoors exhibits, or interpretive staff on hand to answer questions. FWP also sponsors a Hooked on Fishing Program through schools, statewide fishing clinics, and the Montana Angling Youth Club; provides free fishing tackle rental at several regional offices; and stocks family fishing ponds. The FWP Hunter Education Program introduces youngsters to hunting safety and ethics. The department's new Discover Montana Ecosystems website provides fun information about natural resources while inspiring outdoors exploration. For more information, check out fwp.mt.gov, and click on "Education."

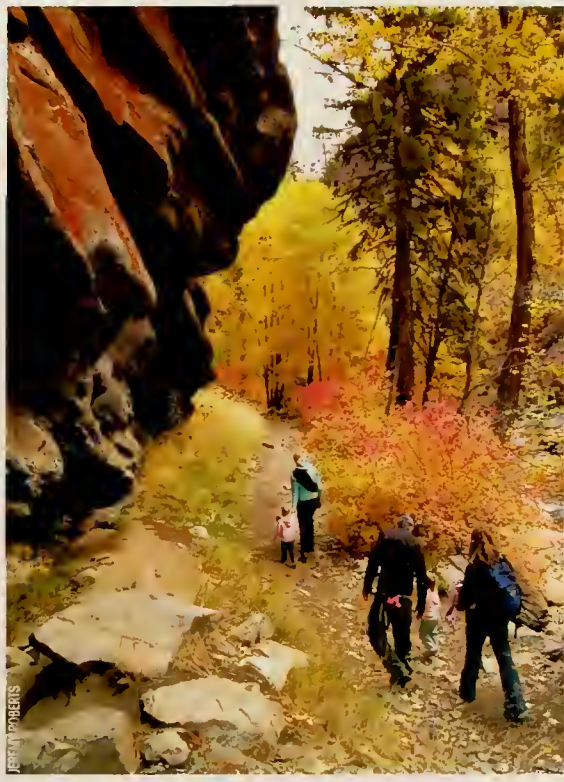
Pheasants Forever, Walleyes Forever, Ducks Unlimited, Trout Unlimited, National Wildlife Federation, Boone and Crockett Club, Rocky Mountain Elk Foundation, and other major conservation groups in Montana provide information aimed at kids and youth education programs. See their websites for details.

The Governor's and First Lady's Science and Math Initiative helps children discover the wonders of science. Learn more at mathscience.mt.gov.

Montana Natural History Center, Missoula, montananaturalist.org, (406) 327-0405.

Ravenwood Natural Science Center, Bigfork, ravenwoodnsc.org, (406) 837-7279.

Yellowstone Association Institute, yellowstoneassociation.org/institute, (307) 344-2293.



BACKYARD STANDOFF A Lab blocks mule deer from entering its owner's yard on the outskirts of Helena. The deer moved off, but they might have held their ground or even attacked. In 2005, a 110-pound Weimaraner was gored to death by an aggressive buck, raising concerns that humans might also be at risk from the city's growing deer population.

LINDA KELLY

MULIES ON MAIN STREET

Why Helena's deer problem could soon spread to communities throughout Montana.

BY TOM DICKSON

Last December, Frank Cooper said his last goodbyes to a canine hunting companion he assumed was as good as dead. Cooper, of Helena, had let his English cocker spaniel out into the backyard in the morning. Fifteen minutes later, the dog scratched at the door and limped into the house, jaw broken and body bleeding, before collapsing in shock. It was the second time the 11-year-old pet had been attacked by a deer in the family's yard. "I picked him up and raced to the vet," says Cooper. "I thought he wouldn't live."

The dog survived, but he might not have. In 2006, a doe killed a 110-pound Weimaraner in its owner's backyard. The year before, game wardens had to kill four aggressive bucks that chased a paper carrier under a car and kept him there for several hours. Dave Loewen, FWP game warden in Helena, says he and other game wardens are responding to increasing complaints about deer threatening homeowners, chasing people during their walks, and false-charging children at school playgrounds and day-care facilities.

The emerging deer problem in Helena and other Montana communities is one that suburbanites and even city dwellers elsewhere in the United States have been

struggling with for years. Primarily due to no-hunting restrictions and housing developments expanding into wildlife habitat, urban deer numbers across the country are growing. Many residents consider the animals a welcome addition to their neighborhoods. But others view deer as garden-munching nuisances and even threats to public safety. In Montana, city officials and Fish, Wildlife & Parks staff are caught in the middle as they try to decide if urban deer populations need control and how to do it safely and humanely. "This is new territory for Montana," says Jeff Hagener, FWP director. "It's something we haven't had a lot of time to work out yet, because it hasn't been a big deal until recently."

With an estimated deer population of 700 and climbing, Helena has Montana's worst urban deer problem, but not the only one. State wildlife officials have counted nearly 400 deer within the city limits of Fort Benton, a small town northeast of Great Falls with a human population of fewer than 1,600. Colstrip and Fort Peck have held special management hunts to reduce deer numbers. Billings, Missoula, Kalispell, and other larger towns also report growing deer numbers and accompanying conflicts between the animals and humans.

The deer boom is partly due to modern wildlife management. The careful regulation of doe harvest has helped rebuild a state deer herd devastated in the early 1900s by unregulated and commercial hunting. The recent string of mild winrers has reduced natural mortality and helped maintain high deer numbers. Meanwhile, Montana cities have been expanding into the countryside. Lush gardens and shrubbery planted around new houses create an unnatural food source that draws deer much closer to urban areas than in the past. "Housing developments are definitely a problem," says Gayle Joslin, a recently retired FWP wildlife biologist in Helena. Irrigated lawns and gardens convert low-nutrition native landscapes into succulent smorgasbords, especially in drought years. "New development is transforming semi-arid lands into the Garden of Eden," Joslin says. "It only takes a couple of deer to figure out it's a much better arrangement, and then they lead others into the new feeding areas."

> **"Housing developments are definitely a problem. It only takes a couple of deer to figure out it's a much better arrangement, and then they lead others into the new feeding areas."**

Most urban deer appear to live harmoniously with people. But some cause problems. Homeowners complain that the animals devour vegetables and flowers. Deer also denude shrubbery and kill saplings by rubbing the bark with their antlers. And then there are the dangerous deer: Mulies have chased joggers, bluff-charged people in their driveways, attacked postal carriers, and squared off with day-care workers. Though these cases remain uncommon, they are

Tom Dickson is editor of Montana Outdoors.

NEW NEIGHBORS Attracted by lush gardens and other foods, mule deer moved into Helena in the early 1990s and have thrived since, growing to a population of 700. Though the animals can be aggressive and occasionally pose a threat to people and pets, most calls to FWP are complaints of deer eating flowers or walking across lawns. "These are not threats to health or safety," says Ken McDonald, chief of the FWP Wildlife Division. Still, deer attacks do occur, such as in 2005 when four bucks chased a paper carrier under a parked vehicle and kept him there for several hours.

occurring more frequently as deer numbers grow. "It's a matter of perspective," says Ken McDonald, chief of the FWP Wildlife Division. "All the deer in Helena aren't out killing dogs and chasing kids across playgrounds. Most of the complaints we get have to do with deer droppings on the lawn and deer eating tulips. But if left unchecked, the few real health and safety problems we now see will continue to increase, so it's important to address deer numbers in Helena before the population grows even larger."

Large numbers of deer in urban areas can create other hazards. "Mountain lions are quick to take advantage of deer concentrations. Having too many deer may lead to an increase in lion activity near residences," says Tim Thier, an FWP wildlife biologist in northwestern Montana. Game warden Loewen says he has seen a steady increase over the past decade in the number of deer killed or injured by vehicles in the greater Helena area. A few years ago, several deer that wandered into a municipal parking ramp jumped three stories to their deaths after being spooked and having nowhere to flee.

Deer lovers maintain that the benefits of viewing deer far outweigh the problems. "We had twin fawns out here last year, and to watch them chase each other in the spring was about the cutest thing you could imagine," says Janet Sperry, a Helena homeowner. Though illegal, some people put out cracked corn and other foods to attract even more deer to the neighborhood. As for deer eating flowers and shrubs, many gardeners modify their landscaping, fencing off plants deer desire and planting others the animals avoid.

Conflicting public views about deer put city officials such as Tim Burton in a bind. The Helena city manager says he sympathizes with residents who like seeing deer, "but when this turns into a public health and safety issue, we feel we have a responsibility to do something about deer numbers."

Cities are limited in what they can do. FWP manages the state's wildlife and must authorize all hunting seasons or wildlife culling, which can put the agency at odds with municipalities. "Wildlife is a state resource, and FWP has the statutory responsibility to manage urban deer just as it manages deer outside city limits," says Burton. The agency has authorized public deer-control hunts in rural Fort Benton, Colstrip, and Fort Peck, but hunting may not be an option in larger municipalities. Hagener points out that FWP lacks legislative authority to aggressively manage wildlife in urban areas and would only reluctantly authorize special urban deer removal programs in which public hunters could not participate. He says the agency provides biological expertise to communities wrestling with deer problems, offers tips to homeowners for reducing deer damage to gardens and shrubbery, and authorizes FWP game wardens to remove deer causing direct public safety threats. In 2003 the department formed a statewide Urban Wildlife Task Force, which reviewed other states' efforts to resolve conflicts between people and wildlife such as deer, mountain lions, and bears.

That same year, the Montana legislature provided cities the authority to manage wildlife for public safety and health. Helena formed its own Urban Wildlife Task Force, which included an FWP biologist as well as citizen volunteers appointed by the city commission. Task force members spent a year studying the deer problem, reviewing citizen opinions, and discussing possible solutions. The group created a management plan that called for stronger enforcement of wildlife feeding laws and more public edu-

A WARDEN'S PERSPECTIVE

Dave Loewen often finds himself in the center of Helena's urban deer problem. As a local game warden, he is called in to dispatch aggressive mule deer charging walkers, threatening homeowners, and frightening children. "It's part of our job to remove threats to public safety," Loewen says. He and other Helena wardens have removed more than three dozen deer in the past two years. A few have stood out. "The deer (lower right) in the play area was part of a group hanging around a day-care facility. Before the kids could go out and play, the day-care workers would have to go out and chase the deer away. But sometimes the deer would square off with the workers and stand their ground. That was a real concern. The buck you see me about to dispatch (above) was the most aggressive deer I've ever seen. The day before, we'd been called in to remove a larger buck that had been bluff-charging people. We shot that buck, but before it died this one attacked and impaled it several times with its antlers. It then threw the bigger buck up into the air onto a hedge and then charged us. I still can't believe the power of that deer. I've never seen anything like it. When you think how unpredictable these animals are, it drives home the point that at times they really can be a major threat to people living around them."

cation to help people learn how to live with deer. The plan also included a controversial proposal to reduce the Helena herd to a manageable size by culling 334 deer using professional sharpshooters. The task force looked at several other options, including transplanting and sterilization, but decided the most humane and effective course would be through lethal means. If the steady stream of opposing letters to the *Independent Record* is any indication, residents appear divided on the culling proposal. City officials backed the plan and asked the FWP Commission to approve the cull and split the costs with the city.

In November 2007, the FWP Commission agreed to support a pilot program that would include culling up to 50 deer in early 2008 by police officers and other city staff. The venison will be donated to Helena Food Share, which has expressed interest in distributing the meat. Because the FWP receives almost no general fund money, commissioners questioned the appropriateness of using hunter license dollars to manage deer that hunters could not hunt. "Becoming involved in urban herd reductions can tie the department to an activity that has no funding source," says Hagener. "It puts us in a tough position."

> "This is a new issue for this department and for communities, and that's why we're being cautious. We want to minimize mistakes and make sure we do what's best for both people and deer."

According to Hagener and Burton, FWP and the city of Helena will ask the 2009 legislature to appropriate general fund dollars to help manage the state's growing urban deer herds. Legislators could also modify state laws prohibiting public hunting within city and town limits. As is done in some other states, carefully regulated public hunts, such as with bows only, could thin urban herds and satisfy FWP's mandate to manage wildlife while providing additional public hunting opportunities. Cities and counties also have the option of changing zoning to make new developments less desirable by requiring native landscaping, limiting the size of irrigated lawns, and making homeowners responsible for removing fruit trees and other food sources that draw deer into town.

What seems certain is that the urban deer issue is not going away. Winters keep getting warmer. Communities are spreading farther into the countryside. And people continue to disagree whether the buck on the boulevard should be shot with a camera or a gun. Though FWP remains committed to helping communities work through those conflicts, says Hagener, Montanans should not expect easy solutions and quick results. "This is a new issue for this department and for communities," he says, "and that's why we're being cautious. We want to minimize mistakes and make sure we do what's best for both people and deer."

JIM STREETER

BACKYARD BAMBI For every Helenan who wants deer numbers reduced, there is another one content with the population as it is. Some deer lovers say the animals make a welcome addition to their neighborhoods. Others point out that "deer were here first," and that humans should accommodate the wild animals. One homeowner says she has never had a conflict with deer, and that wildlife and people should learn to coexist. "We all have to live here together," she says.

Eat Elsewhere

Tips on preventing deer from eating your shrubs and flowers are as varied as the plants themselves. Some basic advice:

Repellent Method	Pros	Cons
Scent: Rotten eggs, blood meal, garlic, human hair, predator urine, moth balls, strong-smelling soap.	▪ Easy to obtain. ▪ Many are home ingredients, and ready-made concoctions are available in garden stores.	▪ Deer become used to the smells and lose their fear. ▪ Rain washes scent off, requiring frequent applications. ▪ Unpleasant-smelling to people.
Noise: Radios, propane cannons.	▪ Initially will work to scare deer.	▪ Neighbors might not appreciate your taste in music, or the cannon's startling boom. ▪ Deer become used to the sound and lose their fear.
Motion-triggered sprinklers	▪ Surprises deer. ▪ No unpleasant odors or chemicals. ▪ Simple to set up and operate. ▪ Works over large areas.	▪ The blast of water surprises people, too. ▪ Limited reach. ▪ Can be expensive. ▪ Not practical during Montana winters.
Fencing	▪ A guaranteed way to keep deer out of areas.	▪ The most expensive method. ▪ Can be unsightly and impractical.

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PLANTS THAT DEER LOVE

Planting these is simply asking for deer depredation: arborvitae, apple trees, crab apple, clematis, euonymus, fir, day lily, tulip, strawberry, hosta, blackberry, raspberry, violet, hybrid tea rose, vinca, trillium, and vegetables.

PLANTS THAT DEER GENERALLY DON'T EAT

Shrubs: barberry, boxwood, forsythia, lilac, potentilla, rugosa.
Flowers: achillea (yarrow), aconite (monkshood), artemisia, bee balm, daffodils, delphinium, echinacea, feverfew, foxglove, French tarragon, heliopsis, hyacinth, hydrangea, hyssop, lady's mantle, lambs' ears, lavender, marigold, mint, oregano, peony, perovskia (Russian sage), sage, sea holly.

Some gardening specialists recommend planting rugosa or other roses along the edge of your yard. Deer don't like to walk through thorny vegetation. Or try planting fragrant herbs such as lavender, mint, catnip, chive, sage, and thyme around flower beds. The smell seems to offend deer.

EVERYONE WINS

More money for K–12 education. More recreational access to state parcels. What's not to love about Montana's new Land Banking Program? BY TOM DICKSON

For years, hunters, anglers, and other recreationists have pulled their hair out over not being able to recreate on certain state school trust fund lands. The parcels, established more than a century ago to generate revenue for Montana education, are open to public recreation. Unfortunately, roughly one-third are surrounded by private property, making them nearly inaccessible.

A new state program, administered by the Montana Department of Natural Resources and Conservation (DNRC), is helping alleviate that frustration. Authorized overwhelmingly by the Montana legislature in 2003, the Land Banking Program sells school trust lands, primarily isolated tracts, then uses the proceeds to buy new parcels that are not only accessible for public recreation but also generate more revenue for education. "It's a terrific win-win situation," says Governor Brian Schweitzer.

Recent trust land sales and acquisitions in Custer County demonstrate how the program works. In 2007, the DNRC sold more than 9,000 isolated acres in that county and used the proceeds from those and other land sales elsewhere in the state to purchase the Tongue River Ranch, located 15 miles southwest of Miles City. The 18,554-acre prairie ranch, acquired in cooperation with Montana Fish, Wildlife & Parks and with financial assistance from Pheasants Forever, includes 1,280 acres of previously inaccessible state trust land and 1,145 acres leased from the Bureau of Land Management. The river breaks landscape provides habitat for mule deer, pronghorn, sharp-tailed grouse, pheasants, wild turkeys, raptors, and songbirds. The ranch abuts two conservation easements purchased by FWP that contain an additional 20,000 acres along the Tongue River, says John Ensign, FWP regional wildlife manager.

The Tongue, winding for 5 miles along the property's southeastern border, supports channel catfish, smallmouth bass, walleyes, sauger, and shovelnose sturgeon. A new fish passageway recently built a few miles downstream at 12-Mile Diversion Dam will improve populations by allowing fish to move up and down the Tongue and gain access to habitat that has been cut off for decades.

Rick Strohmyer, area manager for the DNRC's eastern land office in Miles City, says the property's high-bench pasture gives way to rugged badland breaks that descend to rich prairie riparian habitat. "In the breaks, the view changes constantly as you go behind one hill and discover hidden canyons. Down along the river are great undercut limestone cliffs uncommon in this part of the state," Strohmyer says. "I'm sure parts of this ranch look like they did 100 years ago."

Montana's school trust lands were established in 1889, when Congress passed the Enabling Act. The legislation granted federal land—usually sections 16 and 36 in each township—to several western states for generating revenue for public education. Montana holds 5.2 million surface acres in school trust lands. The DNRC leases the parcels primarily for agriculture, grazing, timber harvest, and oil and natural gas extraction. More than 90 percent of the proceeds goes to support K–12 education statewide.

For decades, public access to school trust lands was up to those who leased the parcels. "In many cases, lessees did not allow hunting except by friends or family members," says FWP director Jeff Hagener, who worked for the DNRC in the 1980s and '90s. Hagener says the 1991 State Land Recreation Use Law opened all state school trust lands to public use, "but there was still the problem with isolated parcels." After the Montana Board of Land Commissioners began discussing selling isolated parcels and reinvesting the proceeds into other lands, the state legislature authorized the DNRC to sell up to 100,000 acres. Lawmakers directed the agency to sell parcels in the same counties where it buys parcels so communities don't lose revenue when property is taken off the tax rolls. Tom Schultz, Trust Lands administrator, says that goal is not always possible. "Land in western Montana is becoming more and more expensive," he says. "We can get more value for the dollar by acquiring property in the eastern part of the state."

In 2006 and 2007, the

PRAIRIE OASIS The Tongue River Ranch includes upland pasture, rolling prairie badlands, and riparian areas that provide great wildlife habitat.

Tom Dickson is editor of Montana Outdoors.

program sold 19,189 school trust acres, almost all of it inaccessible to the public, for a total of $10.7 million. Combined, the tracts had been netting $24,996 per year in leases, an average annual return of 0.8 percent. The DNRC used $9 million of the proceeds to acquire 24,290 acres, including the Tongue River Ranch, that will net roughly $188,197 per year from leases, or a 1.69 percent rate of return. "Revenue will substantially increase, and the public has an additional 24,000-plus acres for recreation," says Schultz. In addition, says DNRC director Mary Sexton, "consolidating parcels will make it easier to manage for traditional purposes such as grazing and also for wildlife habitat."

Like many of the acquired properties, the Tongue River Ranch will remain in production with grazing and cropland leases. "Ranchland stays in ranching and new access is opened up in eastern Montana," says Schweitzer. "Add to that the increased revenue for Montana's school kids, and everybody gets something."

In addition to the Tongue River acquisition, the DNRC has purchased an 897-acre ranch in Cascade County, a 530-acre ranch in Valley County, 2,480 acres of timber land in the Blackfoot River watershed in Powell and Lewis and Clark counties, and 1,842 acres of agricultural and grazing land in Fergus County. The Land Banking Program has been authorized through 2011 and appears on track to reach the cap of 100,000 acquired acres. The Montana Board of Land Commissioners, chaired by Schweitzer, decides which lands are acquired and sold.

FWP staff work closely with Schultz and others in the Land Banking Program to nominate lands containing prime wildlife habitat and offering public recreational opportunities. "The Land Banking Program dovetails well with the programs we do for access and habitat," Hagener says. He adds that the two agencies are working on a joint acquisition of a 5,000-acre ranch along the Milk River that would use funds from Habitat Montana and revenue from school trust land sales. Sexton says the acquisition, along with others in the Land Banking Program, will have lasting value for future generations. "It leaves a legacy for schools and a legacy for outdoors recreationists," she says.

ERIK PETERSEN

SQUEEZING THE MOST FROM THE BLUE SQUARES On land ownership maps, state school trust lands show up as blue squares, usually sections 16 and 36 in each township. Though open to public recreation since 1991, many of these parcels are surrounded by private property. The Land Banking Program sells isolated tracts and then uses the proceeds to buy new school trust parcels that produce more revenue for schools and provide public access for hunting and other recreation. In many cases, the new school trust parcels also contain more habitat for pheasants, sharptails, big game, songbirds, raptors, and other wildlife.

NEAL & MJ MISHLER

DAWN ON THE LEK

BY DEBORAH RICHIE OBERBILLIG

A shadowy specter glides toward the group of about two dozen displaying male sage-grouse, their white chests glowing in the murky light of dawn. As the golden eagle soars closer, the grouse take to the air in a heavy-bodied fluster of wings. Our morning as citizen scientists is over.

Five of us walk from the parked truck several hundred yards to another open area, known as a lek, where male sage-grouse strut for females as part of their spring mating ritual. In a grassy swale we find a pile of sage-grouse feathers, perhaps from a recent golden eagle kill. Our boots crunch on prickly pear cactus and brush against knee-high sage and Idaho fescue. Bitterroot plants thrust up from the cracked earth. A jackrabbit springs past. In the chilly wind we can occasionally hear the tinkle of distant horned larks and the purring chorus of sandhill cranes.

This is our first day of a family weekend at Bannack State Park, field headquarters for the National Wildlife Federation's Adopt-A-Lek Program. The nearby ghost town contrasts with the lively annual courtship ritual performed by these largest of North American grouse. Our adventure is part of an effort to conserve sage-grouse populations that began in 1999. Each April, dozens of volunteers monitor leks in Montana from the North Dakota border across the Hi-Line to the state's southwestern corner. The information they gather helps state wildlife biologists track population trends and pinpoint places where habitat conservation is needed most. Equally important, volunteers who visit these spots to count grouse often fall in love with the sagebrush plant and animal community—an ecosystem in need of more citizen advocates.

We wake at 4:30 on our second day, Easter morning. The sky is clear and the thermometer reads 23 degrees. After warming up with coffee and cocoa, my husband, nine-year-old son, and I leave our camper to join two friends waiting in their truck. In the predawn darkness, a great horned owl hoots from nearby cottonwoods. We head to a lek where the day before we had seen fresh grouse droppings and decided where to park for the best view. We drive the last quarter-mile with the lights off, guided by the waning moon. We stop, open the windows, and listen. After 25 minutes, in the faint morning light, we see male sage-grouse dancing in twos and threes across a ridge of sagebrush. Thirty yards away from the truck, two males fan their spiky tails and puff up their chests to reveal a pair of olive-gold sacs that deflate with a liquid *pop-pop* sound that wafts into the air. By the time the sun shines across the sagebrush, we've counted 11 males and two females.

Making an accurate tally is difficult. Because the males mingle and drift, we have to count them several times, all the while scanning for the subtle brown forms of lurking females. Rising before dawn in a chilly camper is not easy, either. But the effort is worthwhile. By observing nature—whether a parading sage-grouse in the southwestern Montana outback or a robin in our backyard—my family and I merge with the rhythms of the natural world and leave behind our insular indoor lives. This spring morning our senses have come alive as we watch a prairie come awake.

FRIENDS AND FOES The author (in green parka) and a friend after a morning spent searching for sage-grouse on the sage flats near Bannack State Park. Below: Two males square off in a lively mating display to attract females.

W. STEVE SHERMAN

Writer Deborah Richie Oberbillig lives in Missoula.

Northern Flicker

(Colaptes auratus)

By Ellen Horowitz

It sounded like a handsaw drawn back and forth across a board, only louder. Curious, I left the trout creek where I was fishing to find out what was making the strange noise. At the edge of the woods I located a weathered larch snag, where two young northern flickers were noisily calling from the entrance of their nest cavity.

IDENTIFICATION The northern flicker is a common woodpecker and year-round Montana resident. The off-white belly has dark spots, and a black crescent marks the chest. A flying flicker can be easily identified by its flashing white rump. Vivid colors beneath the wings and tail readily identify it as either the red-shafted (western) or yellow-shafted (eastern) subspecies. The yellow-shafted has a brown rather than a gray face and a red crescent on the neck nape. Males are distinguished from females by their red (red-shafted subspecies) or black (yellow-shafted subspecies) "mustache" stripe. Flickers are 12 to 13 inches long.

RANGE Flickers live in open woodland habitats that include urban and suburban neighborhoods. According to Dan Casey, Northern Rockies coordinator for the American Bird Conservancy in Kalispell, the red-shafted subspecies appears across most of Montana. Yellow-shafted flickers can occur anywhere in the state but are more common in the east. The subspecies often interbreed.

HABITS Unlike most woodpeckers, which use trees, the northern flicker forages primarily on the ground, using its long, slightly down-curved bill to probe for ants. The long tongue, extending 1.6 inches beyond the end of the bill, is covered with sticky saliva that collects ants scurrying aboveground or in subterranean tunnels. Biologist have found more than 2,000 ants in the stomachs of some flickers. During fall and winter, the birds add seeds and berries to their diet.

COURTSHIP AND NESTING Courtship begins in late March or early April, when the males establish territories by drumming on trees and other resonating surfaces—including, much to the annoyance of homeowners, house siding and roof flashing. The "wika" mating dance, named for the bird's call, involves an animated choreography of head swaying and tail flaring.

Flickers nest along forest edges. They usually choose snags with decaying heartwood, but also use utility poles, fence posts, and wooden buildings. For roughly two weeks, both sexes excavate the nest cavity to a depth of 12 to 16 inches. The northern flicker is the most prolific egg layer in the woodpecker family. In an experiment where scientists removed eggs as they were deposited, one flicker laid 71 eggs over a period of 73 days. In natural settings, females lay six or seven eggs.

FAMILY LIFE Both parents share incubation duties during the 11 to 12 days it takes for the eggs to hatch. The parents feed their chicks regurgitated ants over the next 23 days. As the young grow bigger, they also grow louder and more demanding. At three weeks, the hatchlings clamor from the entrance of the nest cavity, each trying to be first in line for food. The loud buzzing can resemble the hum of a beehive; some scientists believe this noise discourages predators. By late June or early July, the birds fledge, but they still remain close to their parents for another few weeks.

ECOLOGICAL INTERACTIONS Northern flickers play an important role in forest environments by providing nesting cavities for species incapable of excavating their own. Buffleheads, American kestrels, and several owl species use old flicker nests. In some parts of the United States, European starlings pose a major threat to flicker populations. This invasive species takes over flicker nests and destroys eggs. Casey says northern flicker populations in Montana appear stable.

Writer Ellen Horowitz lives in Columbia Falls.

NEW NEIGHBOR

A whitetail doe eyes prospective living quarters in a Missoula suburb. Burgeoning deer populations in urban areas across Montana are challenging homeowners' tolerance of wildlife—and each other. See our story on page 28. Photograph by Nelson Kenter.

TOP HONORS

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